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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,636	07/11/2001	Thomas Malzahn	MALZ3001 / FJD	7902
23364	7590	08/09/2005	EXAMINER	
BACON & THOMAS, PLLC 625 SLATERS LANE FOURTH FLOOR ALEXANDRIA, VA 22314			JACKSON, ANDRE K	
			ART UNIT	PAPER NUMBER
			2856	

DATE MAILED: 08/09/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/901,636

Applicant(s)

MALZAHN, THOMAS

Examiner

André K. Jackson

Art Unit

2856

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 and 12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 12 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the different shapes must be shown or the feature canceled from the claims. No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed

of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The Examiner has searched the disclosure and cannot find a positive recitation of different shapes associated with the instant invention.

Claim Objections

3. Claims 1-12 are objected to because of the following informalities:
Regarding claim 1 contains the limitation of "different lengths, widths and shapes". The Examiner has searched the disclosure and cannot find a positive recitation of different shapes associated with the instant invention. Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites the limitation "dimensions" in line 2 of the claim.

There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

6. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
7. Claims 1-10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Locke in view of Muller et al.

Regarding claim 1, Locke discloses a "Method and apparatus for material level measurement using stepped frequency microwave signals" which has a signal-generating unit (8), an input coupling unit (12), an antenna (11), and a receiving and evaluating unit (4). Locke does not disclose a dielectric layer containing a feed structure on the side facing away from the filling material, a conductive layer on the side facing the filling material and a plurality of cutouts in the conductive layer. However, Muller et al. disclose in the patent entitled "Device for determining the filling level of a filling material in a container" which has a dielectric layer containing a feed structure on the side facing away from the filling material, a conductive layer on the side facing the filling material and a

plurality of cutouts in the conductive layer (Figure 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Locke to a dielectric layer containing a feed structure on the side facing away from the filling material, a conductive layer on the side facing the filling material and a plurality of cutouts in the conductive layer since multiple frequencies can be used with this antenna. Locke does not disclose the dimensions of the slots. However, it is considered a design choice and clearly within the preview of the skilled artisan to have the slots made a particular size

Regarding claim 2, Locke discloses slot shaped recesses that are substantially radial (Figure 4).

Regarding claim 3, Locke discloses where the dielectric layer defines a center with one group of cutouts arranged at approximately a first radius from the center of the dielectric layer and at least one further group of cutouts arranged at approximately a second radius from the center of the dielectric layer (Figure 4).

Regarding claim 4, Locke discloses where one group of cutouts are spaced from the cutouts of the first group (Figure 4)

Regarding claim 5, Locke does not disclose the dimensions of the slots. However, it is considered a design choice and clearly within the preview of the skilled artisan to have the slots made a particular size.

Regarding claim 6, Locke does not disclose a dielectric layer connected to at least one dielectric on the side containing the cutouts. However, Muller et al. do disclose a dielectric layer connected to at least one dielectric on the side containing the cutouts (Figures 1 and 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Locke to include a dielectric layer connected to at least one dielectric on the side containing the cutouts. By adding this feature the effectiveness of the apparatus would be greatly improved.

Regarding claim 7, neither Locke nor Muller et al. explicitly disclose where the cutouts and feed structure are applied to at least one dielectric layer by etching. However, it is clearly within the preview of the skilled artisan to have the cutouts and feed structure applied to at least one dielectric layer by etching since when adding this feature the effectiveness of the apparatus would be greatly improved.

Regarding claim 8, Locke does not disclose where at least one dielectric layer and dielectric protective layer comprise a circular disk. However, Muller et al. disclose where at least one dielectric layer and dielectric protective layer comprise a circular disk (Figure 2). Therefore, the skilled artisan would have been inclined to modify Locke to include where at least one dielectric layer and dielectric protective layer comprise

a circular disk. By adding this feature the apparatus would be more compact and rugged.

Regarding claim 9, Locke discloses where measuring signals comprise signals in the broadband range (Column 3).

Regarding claim 10, Locke discloses where the antenna and its cutouts cooperate where the antenna emits measuring signals of a selected mode (Column 3).

Regarding claim 12, Locke does not disclose where the dimension and shapes of the cutouts are defined in the planar direction of the first dielectric layer. However, Muller et al. disclose where the dimension and shapes of the cutouts are defined in the planar direction of the first dielectric layer (Figure 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Locke to include where the dimension and shapes of the cutouts are defined in the planar direction of the first dielectric layer. By adding this feature the effectiveness of the apparatus would be greatly improved.

Response to Arguments

8. Applicant's arguments with respect to claims 1-10 and 12 have been considered but are moot in view of the new ground of rejection.

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to André K. Jackson whose telephone number is (571) 272-2196. The examiner can normally be reached on Mon.-Thurs. 7AM-4PM.

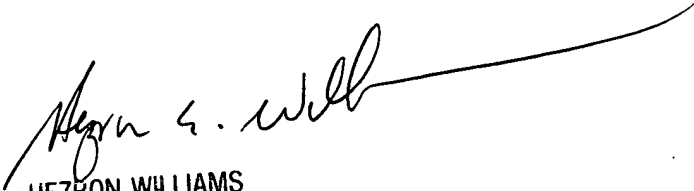
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hezron Williams can be reached on (571) 272-2208. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2856

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A.J.

August 5, 2005


HEZRON WILLIAMS
SUPERVISORY PATENT EXAMINER
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